

## *Pollution Control in the Lower Mississippi*

A CONFERENCE, the first stage in enforcement under the Federal Water Pollution Control Act, convened in New Orleans, in May 1964, to consider pollution of the lower Mississippi River after a massive fish kill during the winter of 1963-64. The meeting was one of 30 conferences held to date under the enforcement provisions of the act and the first to deal with a pesticide as highly toxic to fish as endrin.

On November 18, 1963, the chief of the division of water pollution control of the State of Louisiana requested Federal assistance in investigating a series of spectacular fish kills in the lower Mississippi River. After an on-site investigation early in December 1963, Public Health Service investigators returned to the Robert A. Taft Sanitary Engineering Center in Cincinnati with samples of blood and flesh from dying fish and samples of mud from the river bottom.

In the next 3 months, more than 30 members of 4 research investigating teams in the Public Health Service sought to track down the cause of these fish kills. Teams of investigators from private industry and from the Fish and Wildlife Service, Department of the Interior, were also enlisted in the search.

After eliminating viral and bacterial infection, botulism, heavy metals, and water conditions as causes of the fish kills, the scientists found that endrin was present in the blood of all fish sampled in lethal concentrations. Other pesticides were also present in the river water.

Employment of new techniques of collection, isolation, and concentration of samples, as well as new techniques of analysis made available only within the past few years (some within the past year), made it possible to detect, identify, and measure the endrin in concentrations so low as to have escaped detection in 1960. Dr. Donald Mount, who directed much of the re-

search, concluded that the fish kill in the winter of 1963-64 in the lower Mississippi River was the result of endrin poisoning. An announcement of these findings was made jointly by the Public Health Service and the State of Louisiana on March 19, 1964.

In the light of these findings, the Secretary of Health, Education, and Welfare called a conference, on May 5 and 6 in New Orleans, of the four States directly concerned—Louisiana, Mississippi, Arkansas, and Tennessee.

Between the time of the announcement of the research findings and the enforcement conference, investigators had found a significant source of endrin pollution to the Mississippi in drainage from the Memphis, Tenn., area.

Representatives of the Public Health Service, the Food and Drug Administration, the Department of the Interior, and the Department of Agriculture gave statements at the conference, as well as representatives and witnesses of the States. (The Velsicol and Shell Chemical Companies also presented statements.) A 119-page "Report on Pollution of the Lower Mississippi River: Arkansas, Tennessee, Mississippi, Louisiana," prepared by the Public Health Service, was submitted to the conferees and members of the conference audience.

The conferees arrived at six conclusions after hearing the testimony and engaging in considerable discussion:

1. The Mississippi River in the area covered by the conference is an interstate waterway, within the definition of the Federal Water Pollution Control Act, and a navigable stream.
2. The pesticide endrin was responsible for the fish kill in the Mississippi and Atchafalaya Rivers, in Louisiana, during the fall and winter of 1963-64. Conferees representing the States of Louisiana and Mississippi, and the Department of Health, Education, and Welfare concurred. The conferee representing Arkansas

stated that endrin was at least a contributing factor. The conferee representing Tennessee stated that other factors might also be present.

3. Industrial wastes and drainage from contaminated areas in and near Memphis, Tenn., are sources of the discharge of endrin into the Mississippi.

4. The available data demonstrate that sources other than those in the Memphis area, not yet identified, may contribute to the endrin found in the lower Mississippi drainage area. These other sources must be identified through further study.

5. The presence of minute concentrations of endrin in the treated water supply of Vicksburg, Miss., and New Orleans, La., is a matter of concern. While acute effects on man of this pesticide in water have not been detected, the effects of continued ingestion of even these minute quantities must be evaluated.

6. Discharges of endrin into the Mississippi from sources outside Louisiana appear to constitute pollution within the meaning of the Federal Water Pollution Control Act.

7. Discharges of sewage and industrial wastes reaching the Mississippi River may also cause interstate pollution and may require further study. In any further study consideration should be given to extending the area of jurisdiction to upstream States from which discharges into the Mississippi may be affecting water quality in the conference area. Studies of pollution in tributaries to the Mississippi will commence at the confluence of these tributaries with the main stem and will proceed upstream only if significant pollution is found to affect the main stem.

## Recommendations

The conferees unanimously recommended—

1. Immediate control of known sources of endrin discharges from industry, land drainage, and mud deposits.

2. Identification of other sources of endrin pollution and control as soon as possible.

3. Establishment of a technical committee composed of the conferees or their designees to direct and advise in the identification and abatement of all sources of pollution affecting the main stem of the lower Mississippi. (The Department of Health, Education, and Welfare will participate and aid in the investigatory project.)

4. Preparation of a progress report within 1 year.

5. Issuance by the Department of Health, Education, and Welfare, at the request of the State of Louisiana and for the benefit of other interested agencies, of a preliminary report on progress made to abate pollution of the Mississippi between May and August 1964 (the low-flow month) and on anticipated endrin loads at that time.

6. Reconvening of the conference by the chairman if the technical committee so recommends.

In the 30 enforcement actions initiated to date under the Federal Water Pollution Control Act, involving almost 700 communities and a like number of industrial plants in 36 States and the District of Columbia, all but 4 have been settled at the conference stage, such as the one held in New Orleans, without recourse to more formal legal action.



**Mental Retardation Guidelines for State Interagency Planning.** *PHS Publication No. 1192; May 1964; 23 pages; 25 cents.* Provides general guidelines for State agencies that will be engaged in planning comprehensive action to combat mental retardation under the terms of Public Law 88-156. Includes a brief review of significant Federal and national action that preceded the passage of this legislation. Also includes a supplementary list of materials on mental retardation State planning.

**A Sanitary Standard for Manufactured Ice.** *PHS Publication No. 1183; June 1964; 7 pages; 15 cents.* Gives recommendations of the Public Health Service relating to the manufacture, processing, storage, and transportation of manufactured ice. The standard is designed to serve as a guide to State and local health authorities and the industry in assuring the safety and wholesomeness of ice produced for human consumption.

**Diabetes Source Book.** *PHS Publication No. 1186; May 1964; 48 pages; 40 cents.* Provides rates on diagnosed diabetes, and information on casefinding, screening, factors in potential diabetes, disability, physical limitations, and life expectancy. The booklet is designed to aid students of the diabetes problem, those planning research design on studies, and those engaged in the development of effective public health programs in diabetes.

**Medical Education Facilities: Planning considerations and architectural guide.** *PHS Publication No. 1180-A-1b; 1964; 185 pages; \$1.* Incorporates and revises the material on medical school facilities, previously published in PHS Publications Nos. 874 and 875. Outlines the role and responsibilities of the medi-

cal school complex, including the hospital, discusses the composition of faculty and curriculum, presents planning considerations and space needs for various elements, and gives cost estimates and engineering requirements. Also includes information on the teaching hospital.

**Introduction to Dental Public Health: A self-instruction course.** *PHS Publication No. 1134; 1964; by Dale W. Podshadley and Robert L. Weiss, 183 pages; 70 cents.* A programmed textbook intended as an introduction to public health for undergraduate dental and dental hygiene students. Discusses principles and history of public health practice and emphasizes the role of the private practitioner in initiating and supporting community actions for dental health. Makes use of a self-instructional technique which permits the reader to progress at his own pace. Questions placed at the end of each work unit enable the reader to evaluate his understanding of material completed, and, if necessary, receive a fuller explanation before undertaking the next lesson.

#### **Health Statistics From the U.S. National Health Survey. National Center for Health Statistics**

**HEALTH SURVEY PROCEDURE.** Concepts, questionnaire development, and definitions in the health interview survey. *PHS Publication No. 1000, Series 1, No. 2; May 1964; 66 pages; 45 cents.*

**COMPARISON OF TWO METHODS OF CONSTRUCTING ABRIDGED LIFE TABLES BY REFERENCE TO A "STANDARD" TABLE.** *PHS Publication No. 1000, Series 2, No. 4; February 1964; 11 pages; 15 cents.*

**RECENT MORTALITY TRENDS IN CHILE.** *PHS Publication No. 1000, Series 3, No. 2; April 1964; 34 pages; 30 cents.*

**TYPES OF INJURIES, INCIDENCE AND**

**ASSOCIATED DISABILITY,** United States, July 1957-June 1961. *PHS Publication No. 1000, Series 10, No. 8; April 1964; 47 pages; 35 cents.*

**MEDICAL CARE, HEALTH STATUS, AND FAMILY INCOME,** United States. *PHS Publication No. 1000, Series 10, No. 9; May 1964; 92 pages; 55 cents.*

**CYCLE 1 OF THE HEALTH EXAMINATION SURVEY: Sample and Response,** United States, 1960-1962. *PHS Publication No. 1000, Series 11, No. 1; April 1964; 36 pages; 30 cents.*

**GLUCOSE TOLERANCE OF ADULTS,** United States, 1960-1962. *PHS Publication No. 1000, Series 11, No. 2; May 1964; 25 pages; 25 cents.*

**Census of Dental Programs in Local Health Departments.** *PHS Publication No. 1139; 1964; by George E. Mitchell, Selvin Sonken, and Kathryn J. Connor; 32 pages.* Presents information on dental programs in local health departments for Federal fiscal year 1962. Includes data on staffing, sources of funds and expenditures, types of health units, and dental program activities as well as estimates of population served. The census is one of a number of planned studies on the organization, administration, and staffing of local and institutional dental health programs throughout the United States. The publication will be useful to State and local health departments and other agencies interested in developing guides and standards for dental public health activities.

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This section carries announcements of new publications prepared by the Public Health Service and of selected publications prepared with Federal support.

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